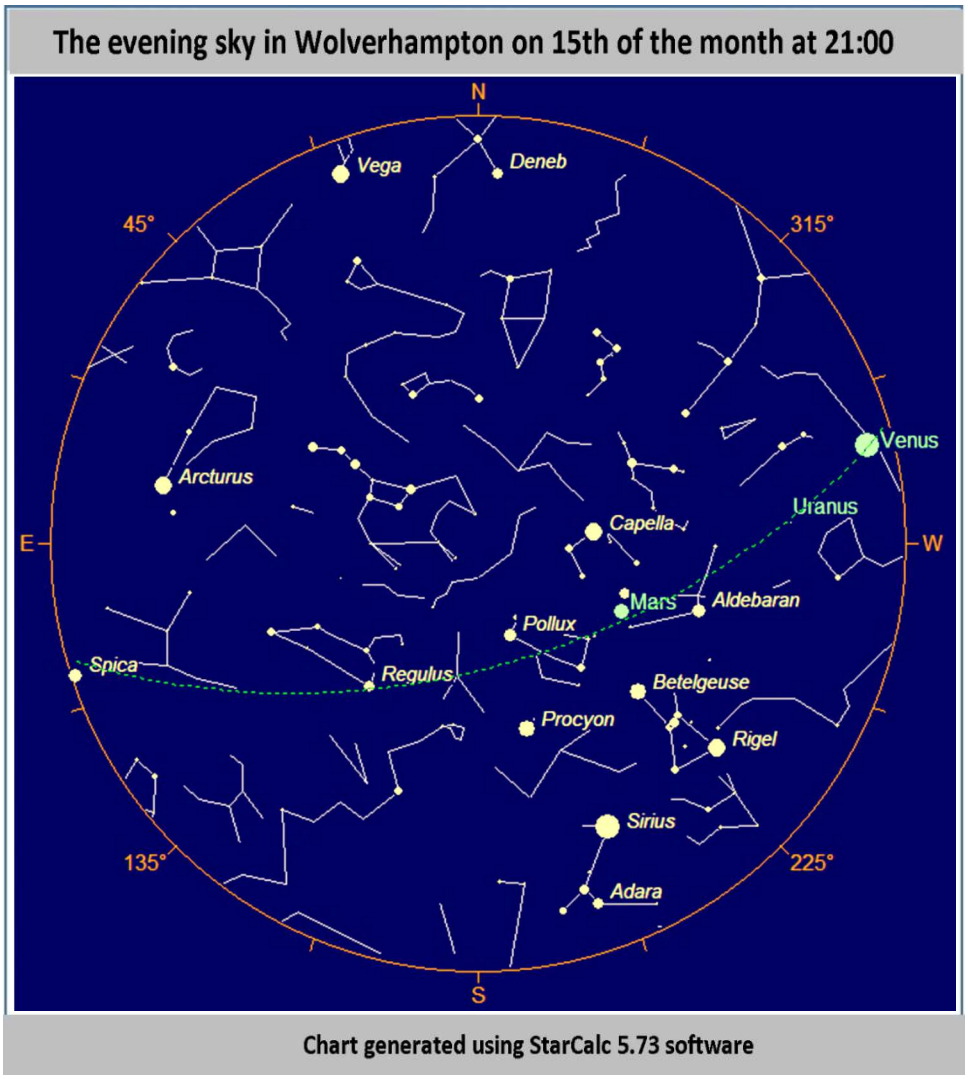
The Night Sky in March 2023

Monthly guide compiled by Doug Bickley

PERTON LIBRARY ASTRONOMY GROUP



Diary of events to look out for this month:

1	Venus and Jupiter conjunction (evening twilight)
2	Moon below Pollux
5	Moon above Regulus
7	Full Moon
16	Perton Astronomy Group meeting 7pm
20	Spring (or Vernal) Equinox
21	Dwarf planet Ceres at opposition
22	Jupiter just above the Moon (evening twilight)
24	Crescent Moon between Venus and Uranus (evening twilight)
25	Crescent Moon below Pleiades M45 (evening)
26	BST - British Summer Time - begins
28	Moon close to Mars (evening)
30	Moon between Pollux and the Beehive Cluster M44 (evening)
31	Venus and Uranus close (evening)

THE MOON

Phases	
Full Moon	7 Mar
Third (last) quarter	15 Mar
New Moon	21 Mar
First quarter	29 Mar

[graphic generated by Coelix Apex software]

Full Moon is on 7 March and the March New Moon will be on 21 March. Native Americans called this last full moon of winter the Worm Moon after the worm trails that would appear as the snow traditionally begins to melt and the ground softens. Other names include chaste moon, death moon, crust moon and sap moon, after the tapping of the maple trees. You'll find some information about this and other interesting topics on the Royal Museum Greenwich website https://www.rmg.co.uk/stories/

PHENOMENA OF THE MONTH

(table generated using Coelix Apex software):

	Date	Hour	Description of the phenomenon
	yyyy mm dd	hh:mm	
1	2023 03 02	05:06	Close encounter between Venus and Jupiter (topocentric dist. center to center = 0.5°)
2	2023 03 02	14:32	Close encounter between Mercury and Saturn (topocentric dist. center to center = 0.9°)
3	2023 03 03	02:29	Close encounter between the Moon and Pollux (topocentric dist. center to center = 2.4°)
4	2023 03 03	18:01	Moon at apogee (geocentric dist. = 405889 km)
5	2023 03 06	05:14	Close encounter between the Moon and Regulus (topocentric dist. center to center = 3.3°)
6	2023 03 07	12:40	FULL MOON
7	2023 03 15	02:08	LAST QUARTER OF THE MOON
8	2023 03 15	23:41	CONJUNCTION between Neptune and the Sun (geoc. dist. center to center = 1.2°)
9	2023 03 17	10:43	SUPERIOR CONJUNCTION of Mercury with the Sun (geoc. dist. center to center = 1.5°)
10	2023 03 19	15:16	Moon at perigee (geocentric dist. = 362697 km)
11	2023 03 20	21:24	SPRING EQUINOX
12	2023 03 21	17:23	NEW MOON
13	2023 03 24	10:23	Close encounter between the Moon and Venus (topocentric dist. center to center = 0.9°)
14	2023 03 29	02:32	FIRST QUARTER OF THE MOON
15	2023 03 29	21:12	Comet C/2019 U5 PANSTARRS at its perihelion (dist. to the Sun = 3.624 AU; magn. = 12.2)
16	2023 03 30	05:59	Close encounter between Mars and M 35 (topocentric dist. center to center = 1.2°)
17	2023 03 30	21:15	Close encounter between Venus and Uranus (topocentric dist. center to center = 1.2°)
18	2023 03 31	11:18	Moon at apogee (geocentric dist. = 404919 km)
19	2023 03 31	20:00	Mercury at its perihelion (distance to the Sun = 0.30750 AU)

THE SUN

Days are slowly getting longer following the winter solstice on 21 December, and the Spring Equinox (when the Sun moves from the southern to the northern celestial hemisphere and days and nights are of equal length) occurs this month on 25-26 March. This marks the official end to winter (hurrah … or boo if as an astronomer you like darker nights) and you will need to put your clock forward (spring forward) by an hour. Here's a chart of sunrise and sunset times in Wolverhampton:

			Astronomical Twilight		Nautical Twilight		Civil Twilight	
	Sunrise	Sunset	Start	End	Start	End	Start	End
Mar-01 Wed	6:55 AM	5:46 PM	5:01 AM	7:40 PM	5:41 AM	7:00 PM	6:20 AM	6:20 PM
Mar-08 Wed	6:39 AM	5:59 PM	4:45 AM	7:53 PM	5:25 AM	7:12 PM	6:05 AM	6:33 PM
Mar-15 Wed	6:22 AM	6:11 PM	4:27 AM	8:07 PM	5:09 AM	7:25 PM	5:49 AM	6:45 PM
Mar-22 Wed	6:06 AM	6:24 PM	4:09 AM	8:21 PM	4:51 AM	7:39 PM	5:32 AM	6:58 PM
Mar-25 Sat	5:59 AM	6:29 PM	4:00 AM	8:28 PM	4:44 AM	7:44 PM	5:25 AM	7:03 PM
Note: clock change forward 1 hour								
Mar-26 Sun	6:57 AM	7:31 PM	4:58 AM	9:30 PM	5:41 AM	8:46 PM	6:22 AM	8:05 PM
Mar-31 Fri	6:45 AM	7:40 PM	4:43 AM	9:41 PM	5:28 AM	8:56 PM	6:10 AM	8:14 PM

The Astronomical twilight band is the darkest of the 3 twilight phases.

Twilight is the earliest stage of dawn in the morning and the last stage of dusk in the evening. This is the time between day and night when the Sun is below the horizon but its rays still light up the sky.

The other bands shown:

- Nautical Twilight - when the Sun is between 6 and 12 degrees below the horizon – most stars can be seen with the naked eye.
- Civil Twilight - the period when enough natural light remains that artificial light is not needed.
- Morning civil twilight begins when the centre of the sun is 6° below the horizon and ends at sunrise.

Have a look at these websites for some more interesting data:

- https://timeanddate.com
- https://time-ok.com/sun/wolverhampton

Although our latitude is a bit low to see the Aurora Borealis, we are now in what is sometimes called the 'Aurora Season'. This comes in March and October (more or less around the equinoxes) each year, and the pattern of auroras increasing twice a year has been well documented.

We know that storms and eruptions on the sun cause disturbances in Earth's magnetic field, called geomagnetic storms. The Sun itself has cycles, including an 11-year solar cycle, and the latter means that we are now starting to see more sunspots. I will write a bit more about this next month.

GENERAL OBSERVING

The winter sky is still changing, and the spring constellations will be with us soon. But the weather is generally starting to get warmer and so observations will be more comfortable and we can finally ditch some of those layers and woolly jumpers.

Spring will begin this year on 25 March based on the vernal equinox when day and night have equal lengths (defined by the angle of Earth's tilt toward the sun). Astronomers said it - so it's official.
So again make the most of the observation opportunities this month (as usual weather permitting) before the skies start to lighten.

PLANETS THIS MONTH

Here is the usual run down of planetary movements for the month of March.

Jupiter is in the W in Pisces at a maximum altitude of 15°. On 1 March mag, -1.9 Jupiter and mag -3.9 Venus will appear separated by 40 arcminutes, just over half a degree (remember the calculation last month - divide arcminute by 60). After this, Jupiter rapidly moves into the evening twilight. On 22 March the planet will be 1.8° above a crescent Moon.

Saturn is still badly placed for observation visible this month.

Mars remains in Taurus at a maximum altitude of 61° in the S, but is moving away from the Earth so appearing dimmer (see the section on Comet C/2022 E3). At the start of the month the planet will appear large enough to present detail through larger telescopes, but this is getting more difficult. On 30 March Mars will be close to the mag. +5.1 open cluster M35.

Uranus is still WSW in Aires at a maximum altitude of 37° as darkness falls with its position getting worse over the month, dropping to just 12°. On 1 March it will shine at mag. +5.8 so not visible without binoculars.

Neptune is in conjunction with the Sun on 15 March and is not visible this month.

Venus is in the W in Aries at a maximum altitude of 22°, shining at mag. -3.9 and is becoming the dominant feature of our skies. At the start of March the planet will appear about half a degree from mag. -2.0 Jupiter. You may be able to spot the phases of Venus at this time looking through a reasonable sized telescope. Perhaps a good photo or at least observation opportunity of this conjunction. On 23 March a slender 5%-lit waxing crescent Moon appears close by. On 30 March a less impressive conjunction takes place between spectacular Venus and Uranus. The planet will be visible all month.

Mercury is in the W in Pisces, still pretty low with a maximum altitude of 6°. After superior conjunction on 17 March it will re-emerge favourably into the evening sky. Mercury and Jupiter are close at the end of the month, appearing 1.5° apart on 27 March. By the end of the month at mag. -1.1 Mercury's separation from the Sun increases so that it will appear above Jupiter.

METEOR SHOWERS

There are no major showers in March - although if you are out on a dark clear night it is always worth looking up just in case you spot a Sporadic Meteor. These are pieces of space dust not directly associated with one of the main meteor showers, and they can come from any part of the sky.
The next major shower to look out for is the Lyrids in April.

COMET 2022 E3 (ZTF)

My last two guides mentioned this visitor to our skies.
It was discovered a year ago at the Palomar Observatory in March 2022 when it had a magnitude of 17.3 and was about 400 million miles away and initially thought to be an asteroid. It is now below naked eye visibility and is on its way back to the Oort Cloud for another 50,000 years.

Picture of the 'Green Comet' taken by the author.

Taken with a DSLR and 300mm telephoto lens on a tripod on the evening of 7 February 2023 when the skies cleared and a quick opportunity arose. Unfortunately the Moon then was almost full which didn't help.

The bright golden star to the left is Capella, the brightest star in Auriga and the biggest and brightest yellow star in our skies.

International Space Station (ISS) **forecast time for visible passes this month**

There are no evening passes forecast this month. As always check the Heavens-Above website particularly if you want to track passes during the night, or use one of the excellent apps.
[source: https://www.heavens-above.com/]

Android:
ISS Detector Satellite Tracker

IOS:
ISS Spotter

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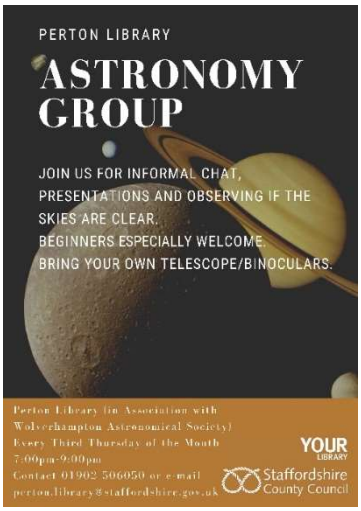

The group meets on the third Thursday of every month of the year at Perton Library (WV6 7QU or on what3words the entrance is ///saints.empty.stands), from 7pm to 9pm. No subscription, no need to book, all free, just drop in at any time during the evening.

The group is a relaxed and friendly gathering with the occasional talk.

We are particularly suited to beginners who very often bring their telescopes along for advice on how to set up – we have experienced members who can help with this. If the skies are clear we do try to do some observing from an area at the rear of the building.

WOLVERHAMPTON ASTRONOMICAL SOCIETY LECTURES

The 2022/23 lecture season is now well under way. Talks are now be in person where possible, also streamed to our YouTube channel, and we may combine this with a hybrid streamed service. Links to anything online will only be available to paid-up members.

The host location for our new live talks will be the University of Wolverhampton in the city centre. Access and facilities are excellent and car parking adjacent. Details are available on the Wolvas website.

Live lectures will be supplemented by the occasional online lecture, please keep an eye on our social media pages and the website for announcements.

Invitations to all talks are emailed to members. For the coming year Wolvas subscription remains a bargain at £10 per annum and you can sign up now our website www.wolvas.org.uk and pay your subscription preferably by bank transfer (see website).

Here is a list of speakers coming up:

20/02/23	Andrew Newsam	Noisy Data: Listening to astronomical observations
06/03/23	Andrew Lound	Development of the Hydrogen fuel cell

(this is our annual free lecture open to the general public, not restricted just to members)
(see poster on next page detailing how to get free tickets)

20/03/23	Peter Jenkins	Astrophotography
17/04/23	Short talks by members	Various topics
15/05/23	Kevin Kilburn	The Magnetic Sun
12/06/23	Dr Julian Onions	Black Holes

Lectures in person or online will only be available to paid-up members of Wolverhampton Astronomical Society. We continue to try and bring you some of the best speakers around.

Watch out for updates
As well as our webpage www.wolvas.org.uk we will be posting details of events on social media, so keep an eye on our Facebook (https://www.facebook.com/wolvasuk) and Twitter (https://twitter.com/wolvasuk) pages for the latest updates and news.